

**REMARKS**

Claims 15-16, 21, 24-33 and 35-40 are pending. Claims 1-14 were previously canceled. Claims 17-20, 22-23 and 34 are canceled herein. Claims 15-16, 21, and 24-33 have been amended. Claims 35-40 have been newly added. Favorable reconsideration of this application, in light of the following remarks, is respectfully requested.

**SUPPORT UNDER 35 U.S.C. § 112**

All of the amendments as presently proposed find support in the application as originally filed. No new matter has been introduced by these amendments.

The amendment to claim 15 finds support in the specification at, for example, page 5, lines 19-23 and 27, page 9, lines 17-24, and page 12, line 28.

Newly added claim 35 finds support at, for example, page 5, lines 16-19.

Newly added claim 36 finds support at, for example, page 6, lines 2-4.

Newly added claim 37 finds support at, for example, page 5, lines 28-29.

Newly added claim 38 finds support at, for example, page 19, line 8.

Newly added claim 39 finds support at, for example, page 8, lines 1-2 and in Examples 5 and 6. While the phrase "plug flow reactor" is not used in the instant specification, there is no requirement under 35 U.S.C. § 112, first paragraph, for *ipsis verbis* support. Applicants assert that a plug flow reactor is reasonably conveyed by the language of the specification and this amendment does not constitute new matter.

Newly added claim 40 finds support at, for example, page 6, line 27 to page 7, line 5.

Finally, newly added claim 41 finds support at, for example, page 7, lines 1-5.

**REJECTION UNDER 35 U.S.C. §103**

Claims 15-34 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Suchsland et al., U.S. Patent No. 5,847,207 ("the Suchsland patent"), in view of Hsu et al., U.S. Patent No. 5,856,567 ("the Hsu patent"). This rejection is respectfully traversed.

First, Applicants reiterate and incorporate the arguments set forth in the Request for Reconsideration filed July 28, 2003. Applicants respectfully request that Examiner explain his conclusion regarding Hsu's "indirect teaching of removing water during the nitrile hydrolysis into the Suchsland process under vacuum, thereby increasing the rate of nitrile hydrolysis. . ." Nowhere does Hsu teach or suggest that evaporation of excess water vapor would increase the nitrile hydrolysis rate. In fact, as noted *infra*, Hsu actually suggests that it may be necessary to increase the water content at reduced sulfuric acid to nitrile ratios, such as those disclosed in Suchsland.

As amended, claim 15 requires that the hydration step (a) be carried out under pressure maintaining a temperature of 60°C or below by the evaporation of water. Under such conditions of reduced water, the hydrating step is completed without the undue production of 2-hydroxy-4-methylthiobutyric acid. Further, as amended, claim 15 requires that the hydrolyzing step not be carried out until the reaction medium from the hydrating step contains more than 98% by weight 2-hydroxy-4-methylthiobutyramide.

As conceded by the Examiner, the Suchsland patent does not disclose a hydrating step that is carried out under a pressure suitable to cause cooling through the

evaporation of water. Suchsland discloses no water vapor removal, only the mechanical cooling of the reactor to maintain a reduced temperature.

The Hsu patent does not remedy any of the deficiencies of the Suchsland patent. In order to establish a *prima facie* case of obviousness, the Examiner must establish, among other things, a suggestion or motivation in the references themselves to make the proposed combination. M.P.E.P. § 2143. Moreover, the reference must be considered as a whole. M.P.E.P. §2141.02. When considered as a whole, the Hsu patent teaches the use of a sulfuric acid to nitrile ratio of 1.0 to 1.5 during start up and a ratio of above 0.9, thereafter. See column 12, line 12. While the Hsu patent acknowledges that the ratio may be lower, Hsu nowhere teaches or suggests that the reaction mixture may be retained at a temperature below 60°C through the evaporation of water. The Examiner's reliance on column 5 is misplaced. At column 5, Hsu acknowledges that the the nitrile reaction rate may be effected by the addition of dilution water. When read in context, the Hsu patent is describing a problem associated with dilution of the product stream prior to complete reaction. To resolve this, the Hsu patent describes the inclusion of a modest residence time for the reaction product stream to allow the reaction to proceed to completion, prior to dilution and subsequent processing.

Furthermore, contrary to the Examiner' conclusion that this indirect teaching of the the effect of water on nitrile reaction rate somehow causes Hsu to suggest the evaporation of water during the hydration step, the Hsu patent actually teaches that is may be necessary to increase the water content. Specifically the Hsu patent states that if the molar ratio of sulfuric acid to nitrile is below 1, which is the condition relied upon in

the Suchsland process, then "[T]he water feed rate may be increased to avoid liquid phase separation. . ."

Based upon the disclosure of the Hsu patent, one of ordinary skill in the art would not be motivated to conduct the hydration step of the Suchland patent under pressure suitable for removing water by evaporation. To the contrary, when considering the Hsu patent, one of ordinary skill, if anything, would be motivated to increase the water content in the hydration step since the ratio of sulfuric acid to nitrile in Suchsland is below 1.0. As no *prima facie* case of obviousness has been established, Applicant respectfully requests withdrawal of this ground for rejection.

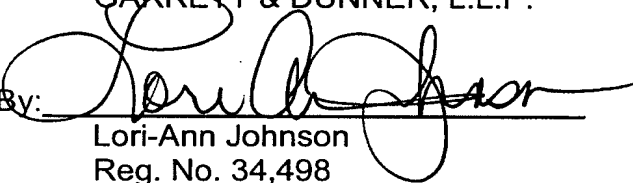
### **CONCLUSION**

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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